



## **Bipolar and Multipolar RFITT Ablation System.**

A minimally invasive procedure for  
applications in surgery and radiology.

# CelonPOWER System.

## Characteristics

The CelonPOWER System is the first bipolar and multipolar ablation system for minimally invasive tumour treatment with radiofrequency induced thermotherapy (RFITT). The treatment can be done in open surgery as well as percutaneously. The system consists of the power control unit CelonLab POWER, the peristaltic pump CelonAquaflow III and the system trolley CelonMobile which includes an infusion stand and a device fixation. The system may control up to three bipolar applicators which are operated simultaneously.

## Bipolar and Multipolar Technique

Thanks to bipolar technology the current flow is confined to the treatment area. The use of neutral electrodes is not required, making the procedure safer compared to monopolar systems. If two or three applicators are connected, the system works in multipolar mode. Under microprocessor control, the current flows between all possible electrode combinations resulting in bigger coagulation volumens, which allows the therapy of large tumours.

Bipolar RFITT (left): current flows exclusively between the electrodes at the tip of the applicator.

Multipolar RFITT (right): current alternates between all possible electrode combinations.

## RCAP Technology

The integrated resistance controlled automatic power algorithm (RCAP) provides for an average power output which is automatically adjusted based on tissue resistance measurements under all therapeutic conditions. This allows an optimal energy deposition and a minimised procedure time. Manual control of the power level is not necessary.

## Additional Advantages

- ▶ Easy to use, automatic applicator recognition
- ▶ Display of effective and average power, applied energy and procedure time
- ▶ Wide range of power levels between 1 and 250 watt, providing high power applications as well as high precision procedures
- ▶ Microprocessor controlled performance with 3D impedance feedback control permits optimised ablations
- ▶ Acoustic impedance feedback signal facilitates track ablation control
- ▶ Footswitch control for independent activation of the ablation
- ▶ Variable positioning of multiple applicators allows for consideration of anatomical structures and precise applicator positions in the tumour periphery
- ▶ The CelonPower-Monitor software displays all relevant therapy data on your computer

Open RFITT procedure in multipolar mode with three bipolar CelonProSurge applicators. Source: J.-P. Ritz, Berlin



Ultrasound guided percutaneous RFITT in multipolar mode with three bipolar CelonProSurge applicators. Source: T. Albrecht, Berlin





# CelonProSurge applicator.

## Characteristics

CelonProSurge is the bipolar RFITT applicator for the ablation of pathological tissue (e.g. tumours). The applicator may be used individually or in combination of up to three CelonProSurge applicators in multi-polar mode.

## Indications

- ▶ Primary and secondary liver tumours
- ▶ Renal tumours
- ▶ Lung metastases
- ▶ Bone tumours and metastases

## Advantages

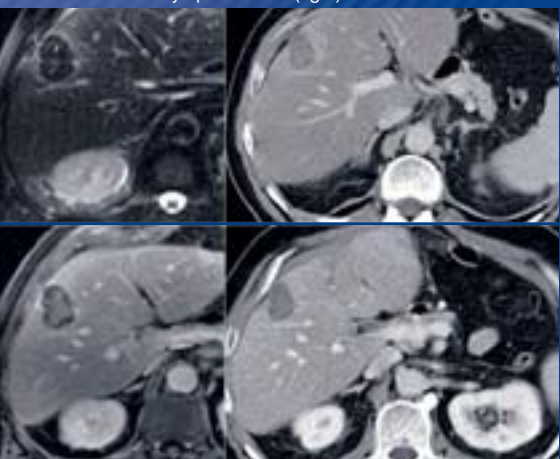
- ▶ Bipolar electrode configuration, no current flow outside the treatment area, no neutral electrodes, treatment of pacemaker patients is possible
- ▶ Small diameter of 15 gauge (1.8 mm)
- ▶ Closed liquid circulation for high coagulation efficacy and reduced risk of tumour cell seeding
- ▶ Sharp trocar tip for easy penetration of solid tumours
- ▶ Shaft markings
- ▶ No movable parts
- ▶ Short handle for excellent usage in CT or MR environments
- ▶ Good visibility under ultrasound, CT and MR (CelonProSurge MR)
- ▶ Various shaft and electrode lengths to adapt to tumour geometry and localisation
- ▶ Includes all necessary cables and tubings as well as CelonPuncture-Guide for position control

## Extension of Indication Spectrum

- ▶ CelonProSurge *plus*: Bipolar applicator for open surgical procedures
- ▶ CelonProSurge *micro*: Bipolar applicator for precision procedures, e.g. osteoid osteomas, pain management, etc.
- ▶ CelonProCurve *micro*: Flexible bipolar applicator for endoscope guided procedures in gastroenterology and pulmonology
- ▶ CelonProCurve 1200-S15: Flexible bipolar applicator for intraluminal coagulation, e.g. vein closure



T2-weighted MR images pre (left) and one day post RFITT (center), CT image seven days post RFITT (right).



T1-weighted MR images pre (left) and one day post RFITT (center), CT image 30 days post RFITT (right). Source: T. Albrecht, Berlin

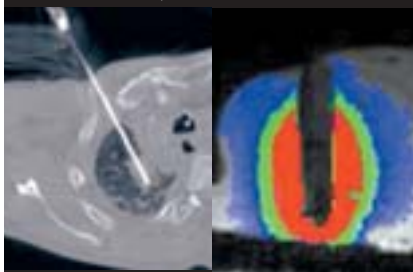
US-guided puncture of liver tumour.  
Source: T. Albrecht, Berlin



CT-guided puncture of liver tumour.  
Source: T. Albrecht, Berlin



CT-guided RFITT of lung metastasis (left) and MR-thermometry of RFITT ex vivo (right).  
Source: C. Becker, Geneva



# CelonSURGICAL products at a glance.

Description	Specifications	Order Information				
<b>CelonPOWER System</b> consisting of <b>CelonLab POWER</b> Power control unit with bipolar and multipolar operation, resistance controlled automatic power (RCAP) and software for therapy documentation.	Output power 1-250 watt Frequency 470 kHz Channels 3 bipolar W/H/D 436/175/335 mm Weight 12 kg Power supply 100-240 V~ 50/60 Hz 380 VA	Type CelonPOWER System Order No. WB992001				
<b>CelonAquaflow III</b> Peristaltic pump with three rotors for the operation of internally rinsed bipolar RFITT applicators.	Flow/channel 30 ml/min Channels 3 rotors W/H/D 436/175/335 mm Weight 12 kg Power supply 100-240 V~ 50/60 Hz 30 VA					
<b>CelonMobile</b> System trolley with infusion bottle stand, conductive wheels and device fixation.	W/H/D 500/900/570 mm Weight 30 kg Max. load/shelf 60 kg					
<b>CelonProSurge</b> Internally rinsed bipolar RFITT applicator for tumour ablation, may be used individually or in multipolar combinations. Shipped with all tubings, markers and CelonPunctureGuide.	Diameter 1.8 mm/15 gauge Tip trocar Cable 3 m Tubings 3.5 m Content 1 piece	Type 100-T20 100-T30 100-T40 150-T20 150-T30 150-T40 200-T20 200-T30 200-T40 250-T30 250-T40	Shaft length 100 mm 100 mm 100 mm 150 mm 150 mm 150 mm 200 mm 200 mm 200 mm 250 mm 250 mm	Electrode length 20 mm 30 mm 40 mm 20 mm 30 mm 40 mm 20 mm 30 mm 40 mm 30 mm 40 mm	Order No. MR-Version WB990136 WB990162 WB990163 WB990164 WB990165 WB990166 WB990167 WB990168 WB990169 – –	Order No. Standard WB990129 WB990146 WB990147 WB990148 WB990149 WB990150 WB990151 WB990152 WB990153 WB990187 WB990188
<b>CelonProSurge MR</b> MR-compatible version of CelonProSurge.						
<b>CelonProSurge plus</b> Internally rinsed bipolar RFITT applicator for open surgery.	Diameter 3.3 mm Other specifications see CelonProSurge.	Type 150-T30 150-T40	Shaft length 150 mm 150 mm	Electrode length 30 mm 40 mm	Order No. WB990174 WB990175	
<b>CelonCable MR</b> Bipolar extension cable for CelonProSurge MR applicators.	Length 4 or 8 m Content 1 piece	Type 4 m 8 m	Cable length 4 m 8 m		Order No. WB950088 WB950063	

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